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UNITED STATES DEPARTMENT OF AGRICULTURE

BUREAU OF ENTOMOLOGY

FOREST INSECT INVESTIGATIONS

REPORT OF PINE BEETLE SURVEY on the WHITMAN NATIONAL FOREST AND ADJOINING PRIVATE LANDS

Season of 1943

by

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Portland 5, Oregon

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U. S. Department of Agriculture
Bureau of Entomology and Plant Quarantine
Forest Insect Investigations

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ABSTRACT

Basis

Data presented are from the eighth (1943) annual pine beetle survey.

Status of Infestation

Infestation which had been increasing during 1940 and 1941 declined abruptly in 1942 to the lowest level attained in the 12-year period for which records are available. In 1942, 0.51 percent of the pine stand was killed as compared with the previous low of 0.54 percent in 1936. The indications are that a further decline of approximately 19 percent occurred in 1943.

Estimated Gross Losses for 1942

No. of trees	Volume M.b.m.	Board ft. per acre	Percent of stand
21,584	12,905	16	.30

Recommendations

No direct control is necessary.

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Season of 1943

The ninth annual survey of forest insect conditions in the ponderosa pine stands within and adjacent to the Whitman National Forest was conducted cooperatively by the Forest Service and the Bureau of Entomology and Plant Quarantine. J. M. Whiteside, W. D. Bedard, and W. J. Buckhorn of the Bureau of Entomology and Plant Quarantine carried out the field work during the period September 3 to 7, inclusive. Cooperative funds were provided by the Forest Service.

War time conditions necessitated limiting the 1943 survey to a 100-percent cruise of current losses on the 320-acre check plots. Of the six plots covered during 1941, five were again recruised. The sixth plot, Tamarack Spring, was lost due to cutting. The Sparta plot, which was temporarily dropped in 1941, was reinstated in 1942 in order to extend the basis for estimating losses.

The 1942 loss record was completed from data secured on the 1943 survey and a partial record of the 1943 losses was obtained. Infestation trends were computed from these data and used, together with previous loss data, to make an estimate of the 1942 losses occurring over the forest as a whole.

Estimates of the virgin stand acreage have again been revised from records of cutting furnished by the Forest Service.

Results of the Survey

During 1942, gross pine beetle losses declined on five of the six plots; the Big Springs plot alone showing an increase. The increase on this plot was largely brought about by Ips oregoni that probably migrated from not-too-distant logging operations. These insects killed a large group of reproduction and top-killed eight adjoining larger trees which were subsequently filled in at the base by Dendroctonus brevicomis. These eight trees constituted half of the mortality recorded on this plot.

Losses on the six plots averaged 38 board feet per acre or 0.51 percent of the stand - 46 percent less than the loss on plots in 1941. The individual plot data are presented in Table 1.

The majority of the 1942 loss was attributed to Dendroctonus brevicomis. However, many of the trees contained a miscellaneous mixture of insects, generally D. monticolae, Melanophila sp., and Ips sp.

Averages over a period of years indicate that approximately 51 percent of the 1943 loss should have been perceptible at the time of survey. On that basis it is estimated that a decline of approximately 19 percent occurred during 1943.

General Forest Conditions

Conditions over the entire forest showed a marked improvement in 1942. Centers of light epidemic infestation, present during 1941 on the Susanville, Prairie City, Sumpter, and Bridgeport units, declined to a normal status and the large center of light epidemic infestation on the Burnt River unit decreased considerably. Losses on the forest are now at the lowest level since the surveys were begun in 1935. The 1942 loss over the forest as a whole is estimated at nearly 13,000,000 board feet, amounting to 16 board feet per acre or 0.30 percent of the stand. These estimated losses are given by areas and units in Table 2.

Infestation Trend

The trend of infestation on the check plots during the past twelve years is shown graphically on Chart 1. In 1942 a loss of but 0.51 percent of the stand on these plots is the lowest since 1930, the first year for which records are available. The previous low point occurred in 1936 when 0.54 percent of stand killed on the check plots. Indications are that a further decrease of approximately 19 percent occurred during 1943.

Recommendations

With a definite improvement of conditions over the forest and centers of aggressive infestation declining, no direct control measures are needed or recommended.

Table 1: Ponderosa pine killed by bark beetles on virgin sample plots - Whitman National Forest and adjacent private lands.

Area and Unit	Plot	PLOT DESCRIPTION Township	Range	Sec.	Timbered Acreage	Pine Volume B.m. (1/1/42)	ACTUAL 1942 LOSS No. of Trees	Volume B.m.	B.m. per Acre	Percent of Stand	Ratio to 1941
DALE											
Dale	Big Springs	8 S	32 E	8 S½	320	2,499,000	16	9,290	29	.37	3.00
JOHN DAY											
Susanville	Susanville	10 S	33 E	17 N½	320	2,157,000	13	8,190	26	.39	.45
SUMPTER											
Burnt River	Experiment Sta.	12 S	36 E	3 N½	320	3,432,000	32	26,840	84	.79	.96
Sumpter	Smith Creek	9 S	38 E	34 S½	317	2,079,000	28	14,090	44	.68	.43
Bridgeport	Auburn Creek	12 S	40 E	3 E½	320	2,156,000	18	6,490	20	.30	.33
	Total				957	7,667,000	78	47,420	50	.62	.55
POWDER RIVER											
Eagle Creek	Sparta	8 S	44 E	5 S½	320	1,683,000	18	7,170	22	.43	.24
GRAND TOTAL	6 Plots				1917	14,006,000	125	72,070	38	.51	.59

Table 2: Estimated insect-caused mortality of ponderosa pine by areas - Whitman National Forest and adjacent private lands.

Area and Unit	PINE TYPE				GROSS 1942 LOSS				
	Virgin Acreage	Cutover Acreage	Total Acreage	Pine Volume M.b.m. (1/1/42)	No. of Trees	Volume M.b.m.	No. Trees per Section	B.m. per Acre	Percent of Stand
DALE									
Dale	89,600		89,600	575,200	2,650	1,720	19	19	.30
Northfork	40,720		40,720	203,100	850	510	13	11	.25
Granite	19,800		19,800	177,200	115	70	4	4	.04
Total	150,120		150,120	955,500	3,615	2,300	13	15	.24
JOHN DAY									
Susanville	65,840	7,610	73,450	525,420	1,810	1,050	16	14	.20
Austin	11,720	56,280	68,000	165,100	230	90	2	1	.06
Prairie City	61,110	4,680	65,790	308,200	2,750	1,570	27	24	.51
Total	138,670	68,570	207,240	998,720	4,790	2,710	15	13	.27
LA GRANDE									
Starkey	16,700	9,340	26,040	142,630	140	70	3	3	.05
La Grande	10,480	24,480	34,960	41,120	170	70	3	2	.17
Total	27,180	33,820	61,000	183,750	310	140	3	2	.08
SUMPTER									
North Powder	6,010	12,020	18,030	92,600	350	70	12	4	.08
Pocahontas	5,460	9,840	15,300	24,400	200	40	8	3	.15
Sumpter	11,440	41,060	52,500	180,590	1,550	770	19	15	.43
Whitney	8,240	29,240	37,480	254,900	500	250	9	7	.10
Burnt River	33,950	6,150	40,100	377,980	3,820	2,680	61	67	.71
Bridgeport	38,420	16,930	55,350	366,040	2,130	1,280	25	23	.35
Unity	13,270	10,970	24,240	328,950	1,440	1,080	38	33	.33
Total	116,790	126,210	243,000	1,628,300	9,990	6,710	26	28	.41
GRANDE RONDE									
Mt. Harris	1,490	16,070	17,560	44,700	130	27	5	2	.06
Minam River	4,480		4,480	18,800	20	11	3	3	.06
Union	600	28,120	28,720	22,770	225	45	5	2	.20
Total	6,570	44,190	50,760	86,270	375	83	5	2	.10

Table 2: (continued)

Area and Unit	PINE TYPE Virgin Acreage	Cutover Acreage	Total Acreage	Pine Volume M.b.m. (1/1/42)	GROSS 1942 LOSS No. of Trees	Volume M.b.m.	No. Trees per Section	B.m. per Acre	Percent of Stand
POWDER RIVER									
Eagle Creek	29,890	39,120	69,010	309,400	2,210	1,330	20	19	.43
Pine Creek	26,750	2,320	29,070	162,700	270	160	6	6	.10
Lookout Mtn.	1,920		1,920	19,100	24	12	8	6	.06
Total	58,560	41,440	100,000	491,200	2,504	1,502	16	15	.31
GRAND TOTAL	497,890	314,230	812,120	4,340,900	21,584	12,905	17	16	.30

Figure No. 1

TREND OF CHECK PLOT LOSSES

WHITMAN NATIONAL FOREST